DECLARATION OF DR. THOMAS OAKES

1. My name is Dr. Thomas W. Oakes. I reside at 10303 Centinella Drive, La Mesa, California, 91941.
2. I am the inventor of the "System and Method for Generating Hydrogen Gas Using Renewable Energy", for which U.S. Patent Application number 10/785,234 was filed on February 24, 2004. This U.S. Patent application was preceded by a formal Disclosure application # 1529415 to the U.S. Patent & Trademark Office, dated April 8, 2003.
3. I received my doctorate degree from The University Of Utah in the field of Medical Sociology. I have a masters degree from Brigham Young University in the field of Personnel and Guidance. I also have a bachelors of science degree from Brigham Young University in the field of Psychology.
4. I was an Assistant Professor of Sociology at Northern Arizona University from 1974 to 1978.
5. From 1982 to 1991 I carried out government contracted research and development. That work included awards for 7 Small Business Innovative Research (SBIR) awards and other direct contracts with the U.S. Navy. One of the SBIRs was with the U.S. Transportation Department focusing on improvements for solar cell photovoltaic electricity generation. Improvements were achieved in increasing electrical generation of such silicon cells and increases were designed, implemented, and tested to increase photovoltaic cell longevity.
6. In the 10/785,234 application, a proton exchanging membrane is described. The membrane may have a thickness of between about 50 microns and about 125 microns. The application identifies that one such membrane was available from the DuPont ® corporation. A person knowledgeable in the process of electrolysis would have understood that DuPont Nafion ® meets these technical and process guidelines. DuPont Nafion ® is a tradename for sulfonated tetrafluorethylene copolymer membrane.
7. In addition, I have carried out testing and design research employing polyphenylene sulfide (PPS) polymer proton exchange membranes from Chevron

Phillips Chemical Company Engineering Polymers Group to further broaden my knowledge and understand of membrane technology in the process of splitting water to derived hydrogen. Chevron Phillips Chemical PPS functions as a proton exchange membrane with certain features that make it competitive to DuPont Nafion. Work has been carried out employing Chevron Phillips Chemical PPS membrane material in thickness ranging from 2 mills, 5 mills up to 25 mills in thickness.

8. All statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I understand and acknowledge that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon.

Thomas W Oakes February 25, 2008

Dr. Thomas W. Oakes, PhD

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THOMAS W. OAKES
PHYLLIS R. OAKES
10303 CENTINELLA DR. PH. 619-670-6555
LA MESA, CA 91941

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DATE March 15, 03

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MEMO Invention Disclosure Doc

Thomas W Oakes

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INVENTION DISCLOSURE DOCUMENT

1) **Title of Invention:** Hydrogen By Solar Direct Photolysis Photolectrochemical Electrolyzer

2) **Inventor(s)**

	Name	Address
a.	Thomas W. Oakes, PhD	10303 Centinella Dr. La Mesa, Ca 91941

3) **Date Idea First Conceived:** November 20, 2001

4) **Development of Invention:**

a. **Date of first drawing:** Nov 20, 2001 **Drawing No.:** 1

b. **Date of first written description (Other than this disclosure):** Jan 15, 2002

c. **Has it been tested?** Yes **Date:** November 15, 2002

d. **Is there a model?** Yes **Date Model Completed:** Nov 15, 2002

e. **Has this invention been used?** Yes **Date:** Nov 15, 2002

f. **Where or how was it used:** Used at 10303 Centinella Dr, La Mesa, CA 91941. Unit placed in sun exposure several days in a row, where visual bubbles of hydrogen rose out of the device.

5) **WITNESSES: Sign full name – State whether disclosure was made by means of verbal discussion, drawings, model or written descriptions.**

	Name and Address	Date Disclosed	How Disclosed
a.	Robert E. Oakes 587 Terra Ln, El Cajon, CA 92020	Nov 10, 2002	Observed prototype model under construction. Also observed hydrogen bubbles rising from device Nov 16, 2002.

Robert E. Oakes

b. Kenton T. Oakes 1946 John towers Ave. El Cajon, CA 92020 Nov 10, 2002. Observed prototype model under construction.

Kenton T. Oakes

c. Paul Aston, 1950 John Towers Ave. El Cajon, CA 92020 Nov 10 - 14, 2002 Assisted in the construction of the prototype.

6) Drawing, Sketch or Photograph Illustrating the Invention:

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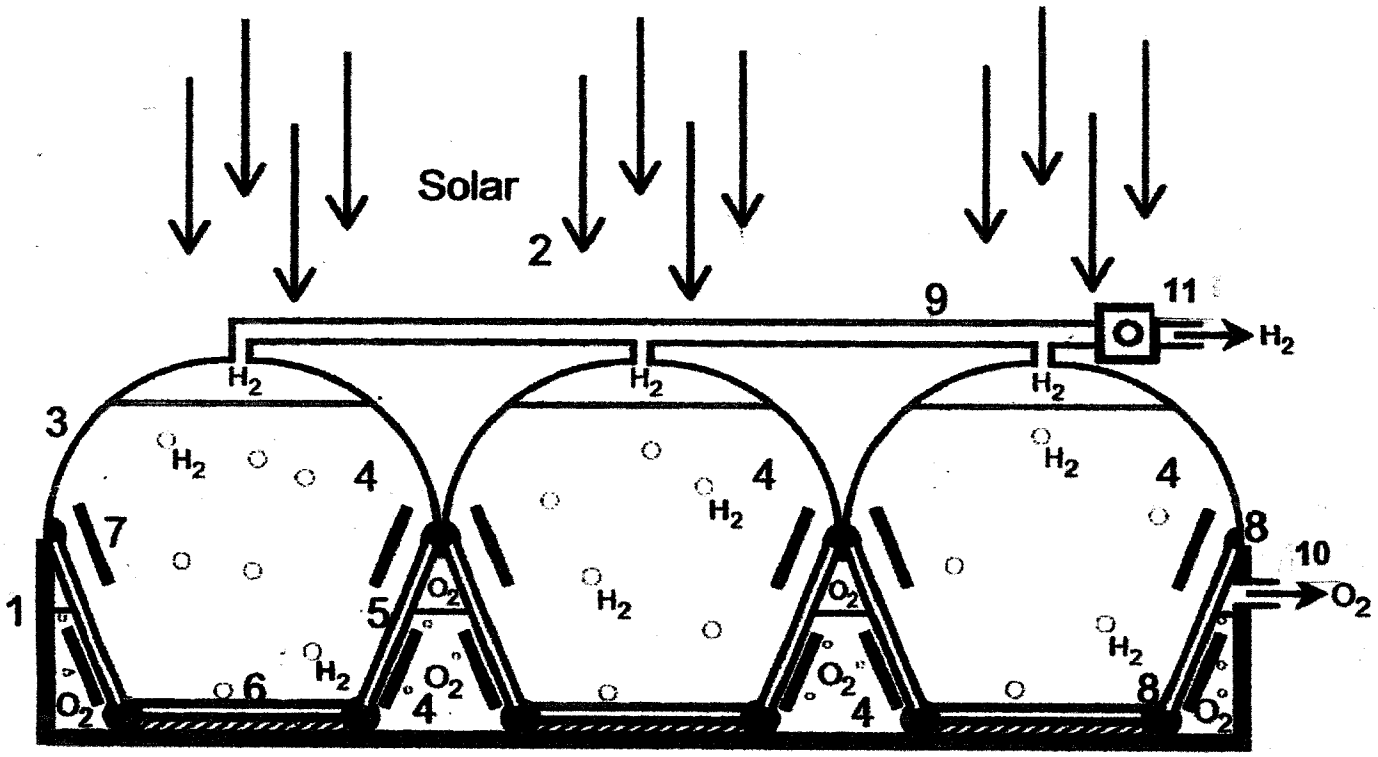
Figure 1. Photolysis, Solartolysis, electrochemical direct solar hydrogen production Apparatus Line Drawing of Case-Container, Solar Concentration, Aqueous Electrolyte, H2/O2 Water Splitting membrane, Photovoltaic Cell, and H2 and O2 Processing and Measurement



1. **Case-Container**
2. **Solar Radiation**
3. **Solar Concentration – Acrylic, Clear**
4. **Aqueous Electrolyte**
5. **Membrane in High Density Polyurethane Frame**
6. **Photovoltaic Cell**
7. **Electrodes**
8. **Epoxy Adhesion**
9. **Hydrogen Piping**
10. **Oxygen Piping**
11. **Continuous Hydrogen Production, Monitoring and measurement**

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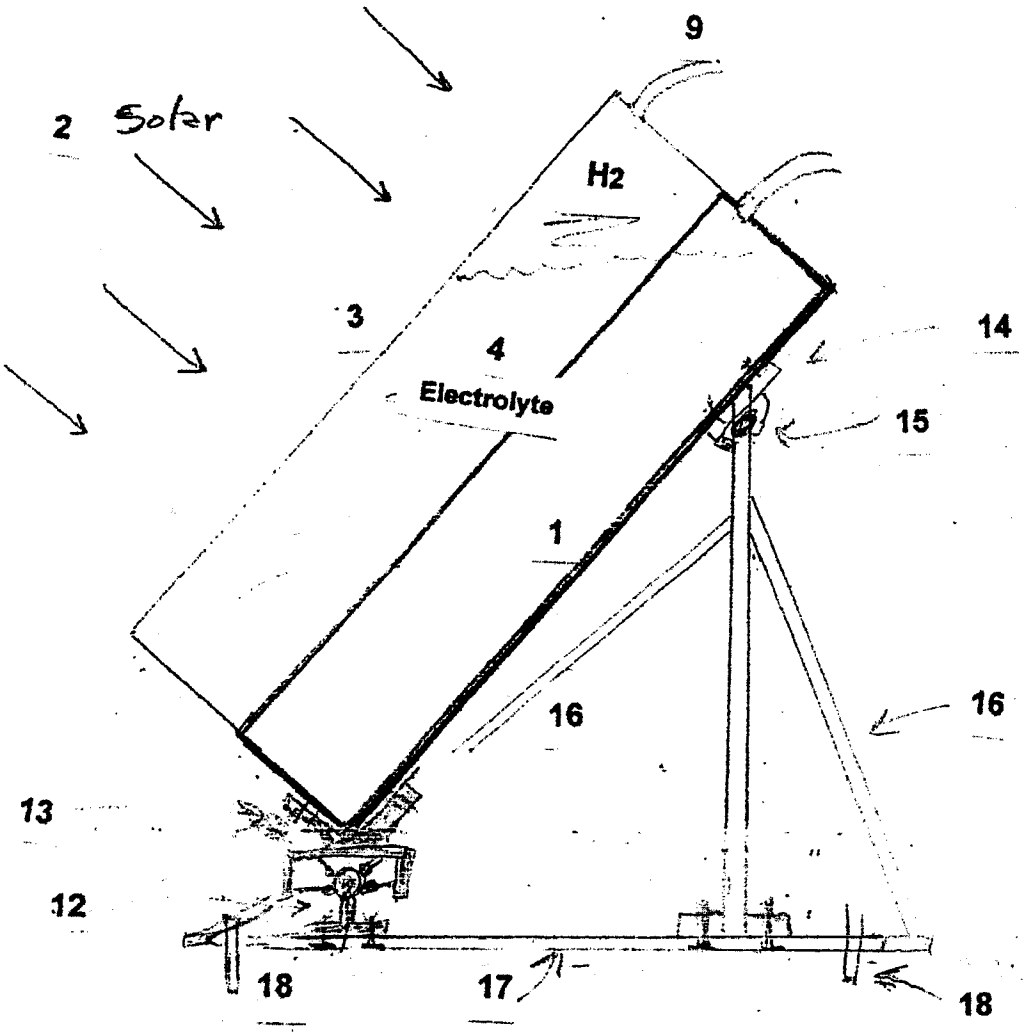
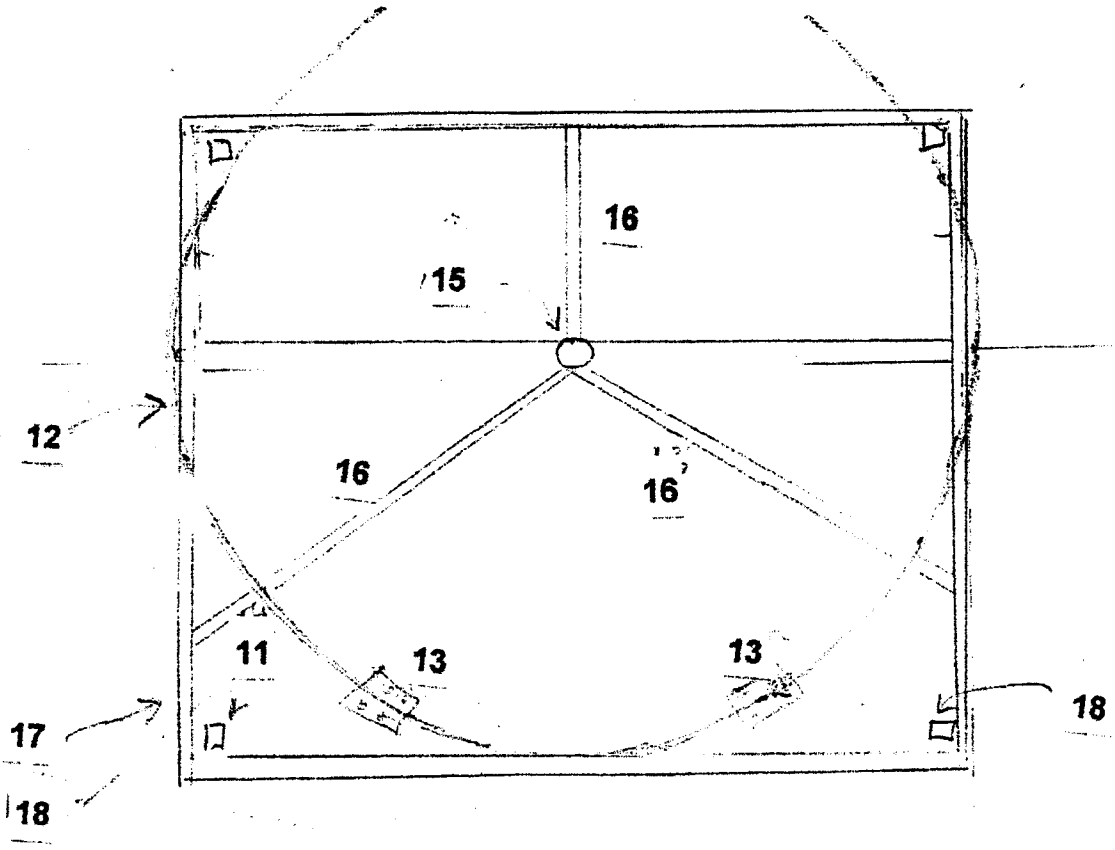
Figure 2. Photolysis Apparatus Line Drawing with Rotation Mechanism and Base Frame.



1. Case Container Attached to Rotator at 13 & 15
12. Track Base Round and Circular
13. Four point rolling guide – attached to case (1) and grasping Track (11)
14. Grasp attached to case (1) and over pivot point.
15. Pivot Point of Rotation and post
16. Brace for pivot point post.
17. Base Frame
18. Leveling Legs for Attachment to building or ground.

Figure 3 Photolysis Apparatus Base Frame with Rotation Circular.



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An apparatus and method for performing photolysis or electrolysis with materials such as water, thereby electrically separating the electrolyte into its elemental components. More specifically, according to a preferred aspect of the instant invention, there is provided an apparatus for splitting water into hydrogen and oxygen that employs solar concentration on semiconductor photovoltaic cells under aqueous or polymeric electrolyte and specifically prepared anode and cathode materials, separated by a polymeric membrane that processes the electrolyte into hydrogen and oxygen under solar exposure. A preferred embodiment of this apparatus uses solar concentration though a curved lens focusing through an electrolyte on to an immersed photovoltaic cell or a polymeric electrolyte, there by producing and increasing the hydrogen and oxygen production out of the electrolyte from a given amount of solar radiation and included is a means to collect, purify, pressurize, and stored hydrogen produced for use in fuel cells to generate electricity or other energy needs.

8) Signatures:

The undersigned certify that to the best of their knowledge, they are the original, first and sole inventor(s) of the above invention.

Inventor(s)	**Date**
a. Thomas W Oakes	March 15, 2003
Thomas W. Oakes, PhD	

6) Drawing, Sketch or Photogra[illegible] Illustrating the Invention:

PROPRIETARY INFORMATION, RESTRICT DISTRIBUTION AND DISCLOSURE

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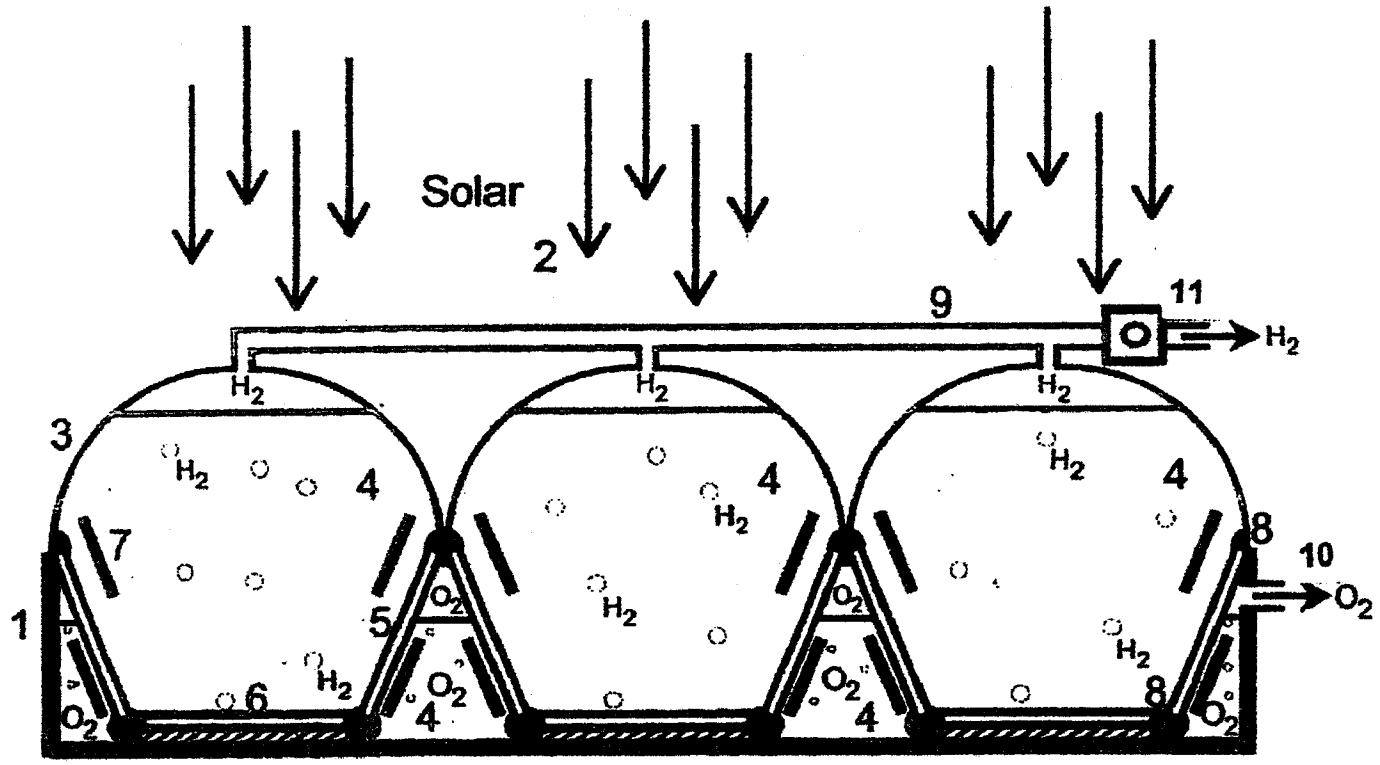

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